Deepika Negi Intomal-4 CSPSPL-1 Rollno: 43 T(n)=3T(n/2)+n2 cheel, 10=3, b=2 y(m)=m2 40, nolog 3= nolog23 Pince n log3 < n2 La, decemberg to master's Eleonem TCm 20 Cm2) @2 T(n) 2 4T(n/2)+n2 here, a = 4, b=2 & f(n)=n2 la, ndagsaz ndag245 ndag (2)2 n dogs = y con Ace to master & Sheaven, TCM) 20 Cm 2 logn) Ten) 2 T (h/2) +24 love 1 ca-1, bz 2 and f (n 2 24)

va, n log 2 2 n log 2 2 2 h log 2 20 Vince, 1 < f (on) Ace do Markon's Musicam,

Masterie theorem is not applicable vince 10'is a

Q5. T (m)=16t (1/y)+n

Love, a=16, b=4 and f(n)=m

fo, a log & = n log = n lo

Ob. TCM > 2T (n/2)+ n logn

level, a=2, b=2 fen)=n logn

60, n logto = n log2= n

Acc. to mesterly theorem

TCM)=6(n logn)

Q7 T(n) = 2T(n/2) + m/logn d=2, b=2, f(n) = h/logn lQ, nlog = 2 mlog = 2 m.Since, nlog = 2 m.

Acc to Mater of Theorem
T(n)=0(n)

08 T(n)= et (n/y)+ n°.51

(a=2 &=+ , f(n)= n°.61

y n dag de => n dag 42 = noix since hologistz fcm) Acc. La Master & theorems TCn2 o(no.3) 09. TCm720.51(n/2)+1/m not applicable maitery theorem since a 1. Q10 TCn)= 16+ (n/4)+n! cheve, a=16, b=44 f(n)=n! Eo, nlog ba = nleg u = nlog y u)= n² Suice, m log 5°2 2 n! Ace. to Master's Alequem, T(n)20(n!) Q12. T(n)= Sqst(n)+logn. Since a & constant Mastery theorem not applicable. Q11 t(n)24T(n/2)+logn. So, hogo z nogen. since, neggia > fan) Master + (m) 20 (n2)

Q13. TCn7=3T(n/2)+n choile a=3, b22 4 f(n)2n mlog & 2 h 1.58 mdog 23 ndogs > y(n) T(n) = o(n 1.58) 014 T (n)=3T (n/3)+vn a=3, b=3f y(m)=1n n dog 3 = n > f(n) T(n)=0(n) Q15. T(n)=4+(n/2)+n. a24, de 2 4 of (n) 2 m ndg_ 1 = n2 > f (n) T(n) 20 (m2) Q16 T(n)=3T(n/4)+nclogn. 223, b=4 & f(n)=ndogn ndogy3 = n0.187 < f(n) T(n) zo (n dosn) Q19 T(n)=3T(n/3)+n/2 Q23, b23 & f (on) 2 h/2 mlog 36 2 n 1.63 < n 2 log n. T (m) 20 (n2 dog n)

018 tCn)26+ (n/3)+n? logn az6; bz3 f (n)zm²dogn M dog & 2 ndog 3 = n 1.63. 2 n 2 bogn T(n)=O(m? logn) @ 19 TCM = 47 (n/2)+n/logn a4, b22, f(n)=n/logn ndog 42 n2>f(n) T(m) 20(m2) T(n) = 64T(n/8) = m2 logn here, of (n) is not an enceasing function. Therefore, Q21 : T(n)2 7 (n/3)+n2 1a=7, b=34/Cm)=n2 Express Asserted on the market of n dog3 t = n1.7 n logs & f(n) i. acc. to master's method T(m) = O(m2) T(m)=T(n/2)+n(2-com) here master's theorem is not applicable due to rustation of degularity condition.